REMARKS

Claims 1-13 and 25-26 are pending. Claims 1, 10, and 25 are in independent form. Claims 14-24 have been canceled without prejudice or disclaimer and subject to Applicant's right to pursue the subject matter of the canceled claims in a continuing application.

In the action mailed July 19, 2006, claim 10 was rejected under 35 U.S.C. § 102(b) as anticipated by European Patent Application No. 0915384 to Canon Kabushiki Kaisha (hereinafter "Canon").

Claim 10 relates to a method that includes forming an interference pattern of non-exposed lines and exposed spaces on a photoresist, and exposing a portion of at least one line to radiation to form features with a second width. The lines have a first width. The second width is less than the first width. The pitch of the features is at least one and a half times the pitch of the interference pattern.

The rejection contends that Canon describes exposing a portion of at least one line to radiation to form features with a second width that is less than the width of the non-exposed lines of the interference pattern. Applicant respectfully disagrees.

In this regard, Canon describes a system that uses multiplex exposure amounts to produce a pattern. *See, e.g., Canon*, para. [0106]. According to Canon, multiplex exposure amounts are achieved when three or more exposure levels (including zero level exposures) are used. This contrasts with the two exposure levels of a binary exposure levels system. *See Canon*, para. [0032]. FIGS. 8A, 8B, 9A, 9B of Canon illustrate Canon's use of multiple exposure levels. In particular, the exposure levels denoted "0" and "1" are below the threshold exposure level "E_{th}" whereas the exposure levels denoted "2" and "3" are above the threshold exposure level "E_{th}."

FIGS. 11A-C illustrate how Canon uses the multiple exposure levels to define the fine circuit pattern of FIG. 10. In particular, an interference pattern exposure (FIG. 11A) is accumulated/superpositioned with one or more subsequent exposure patterns (FIGS. 11B, 11D) to yield an exposure distribution corresponding to the fine circuit pattern (FIG. 11C). *See Canon*, para. [0105].

Applicant submits that none of the subsequent exposure patterns, either in FIG. 11B or elsewhere in Canon, has a width that is less than the width of the non-exposed lines of the interference pattern. With reference to FIG. 11B, the exposed areas denoted "2" appear to have a width that is twice as wide as the non-exposed lines. The exposed area denoted "1" appears to have a width that is three times as wide as the width of the non-exposed lines.

Accordingly, Canon neither describes nor suggests exposing a portion of at least one line to radiation to form features with a second width that is less than the width of the non-exposed lines of the interference pattern. Anticipation has not been established. Applicant therefore requests that the rejections of claim 10 and the claims dependent therefrom be withdrawn.

CLAIM 25

New claim 25 has been added. To advance prosecution, Applicant now addresses the patentability of new claim 25 over Canon.

Claim 25 relates to a method that includes using interference lithography to expose an interference pattern of non-exposed lines and exposed spaces on a photoresist, and using a second lithography process to trim and narrow a width of at least some of the non-exposed lines by exposing portions of the non-exposed lines using a second exposure having a second pitch. The interference pattern has a first pitch. The second pitch is different from the first pitch.

Canon neither describes nor suggests using a second lithography process to trim and narrow a width of at least some of the non-exposed lines, as recited in claim 25. In this regard, the non-exposed lines in Canon's interference patterns appear to maintain the width they have when they are created. For example, referring to FIGS. 11A-11C, the width of the non-exposed line that ultimately defines the line between the gate is maintained from FIG. 11A through FIG. 11C. Nothing in Canon describes or suggests that such a line can be trimmed and narrowed, as recited in claim 25.

CLAIM 1

Claim 1 was rejected under 35 U.S.C. § 102(b) as anticipated by Canon.

As amended, claim 1 relates to a system that includes a first apparatus to radiate an interference pattern of lines and spaces on a photoresist, and a second apparatus to radiate selected areas of the photoresist, and an alignment apparatus to align the selected areas radiated by the second apparatus with the interference pattern radiated by the first apparatus to trim and narrow the first width of at least some of the lines. The lines have a substantially equal first width and remain unexposed to radiation. The spaces are exposed to radiation. The selected areas expose portions of the lines to radiation. A pitch of the selected areas exposed by the second subsystem is at least one and a half times a pitch of the interference pattern.

Canon neither describes nor suggests an alignment apparatus to align the selected areas radiated by the second apparatus with the interference pattern radiated by the first apparatus to trim and narrow the first width of at least some of the lines, as recited in claim 1. In this regard, as discussed above, the lines unexposed to radiation in Canon's interference patterns appear to maintain the width they have when they are created. Nothing in Canon describes or suggests an alignment apparatus to trim and narrow the width of such lines, as recited in claim 1.

Accordingly, claim 1 is not anticipated by Canon. Applicant therefore requests that the rejections of claim 1 and the claims dependent therefrom be withdrawn.

Applicant asks that all claims be allowed. No fees are believed due at this time. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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